



Oceangoing Ship Onboard Incineration
Public Workshop
Sacramento
August 30, 2006

Air Resources Board
California Environmental Protection Agency



Background

- Assembly Bill 471
- ATCM for Cruise Ship Onboard Incineration (Cruise Ship ATCM)
- Senate Bill (SB) 771
- Staff is proposing amendments to Cruise Ship ATCM to incorporate SB 771 requirements

Background (cont'd)

Ports	Number of Port Calls	% of total
Los Angeles/Long Beach	5100	50
Oakland	1900	20
Carquinez, Richmond, Port Hueneme (combined)	1700	17
Others	1200	13

SB 771

- Effective January 1, 2006, oceangoing ships prohibited from conducting onboard incineration within three miles of the California coast
- Reduces exposure to toxic air contaminants, such as dioxins and toxic metals, for residents living near ports and the California coastline
- Air Resources Board (ARB) is amending the Cruise Ship ATCM to implement this legislation

SB 771 - Applicability

- Defines oceangoing ships as follows:
 - A private, commercial, government, or military vessel of 300 gross registered tons or more calling on California ports or places.



Existing Requirements for Onboard Incineration

- Annex V of MARPOL 73/78
 - Entries in garbage record book
 - Date and time of start and stop of incineration
 - Position of ship (latitude and longitude)
 - Estimated amount of incinerated garbage
 - Signature of officer in charge of operation
- Annex VI of MARPOL 73/78
 - IMO certificate, operating limits for incinerators, prohibition of incineration of certain wastes
 - Entered into force May 19, 2005

Onboard Incinerator Survey

- Conducted onboard incinerator survey
May 2006
 - Determine current incineration practices
 - Amount of garbage
 - Days and hours of operation
 - Air pollution control
 - Alternative waste treatment
 - Responses from approximately 400 oceangoing ships

Onboard Incinerator Survey Results

Total Waste Burned per Year for All Locations	Min.	Max.	Avg.
Cubic Meters (172 ships reporting)	0	2253	71
Tons (30 ships reporting)	0.05	2578	111

Onboard Incinerator Survey Results

Total Waste Burned per Year Within Three Miles of the California Coast¹	Cubic meters
Ship One (Bulk Carrier)	0.04
Ship Two (Auto Carrier)	0.06
Ship Three (Auto Carrier)	0.45

1. For the year 2005 – Prior to the effective date of SB 771.

Onboard Incinerator Survey Results

Type of Waste	% of ships incinerating this type of waste
Rags	89
Paper products	82
Floating dunnage, lining, or packing material	16
Plastics (including light plastics)	15
Food waste	3
Glass, metal, bottles, crockery, etc.	2
Other (e.g., sludge oil, waste oil, oil filters, cardboard)	37

Onboard Incinerator Survey Results

- Alternative Treatment to Onboard Incineration
 - Variability among oceangoing ships
 - Disposal to port facilities
 - Plastics, batteries, incinerator ash, sludge and waste oil, hazardous waste
 - Items separated out for recycling
 - Cans, cardboard, glass, metal
 - Most food waste disposed at sea
 - Other garbage disposed at sea

Onboard Incinerator Survey Results

- Other information
 - Incinerators uncontrolled
 - 44 percent of ships have no incinerator
 - Average number of crew is 19
 - Military provided summary information on 20 ships

Health Impacts

- Health and Safety code section 39665 requirements us to evaluate:
 - The potential emissions and health impacts associated with toxic air contaminants
 - Potential cancer risk
 - Noncancer health impacts
 - Used data from survey to conduct a qualitative assessment

Health Impacts (cont'd)

- Toxic air contaminants typically associated with incineration (land based)
 - Dioxin/furans
 - Highly toxic, persistent and bioaccumulative
 - PAHs
 - Metals
 - Cadmium, lead, mercury, arsenic, nickel, manganese
 - HCl (hydrochloric acid)
 - Other pollutants
 - Particulate matter, hydrocarbons

Health Impacts (cont'd)

- 2005 cruise ship health risk assessment results
 - Potential cancer risk up to 2 chances per million
 - Non cancer health impacts low
- Oceangoing ships impacts likely to be less than cruise ships
 - Significantly lower amount of waste generated and incinerated onboard
 - Approximately 45% of oceangoing ships have no incinerators
 - Average crew is 19 compared to several thousand passengers onboard cruise ships
 - Limited operating schedule
 - Prohibitory company policies

Three Mile Determination

- Using the Three Nautical Mile Line as shown on the National Oceanic and Atmospheric (NOAA) Nautical Charts
- State of California comprised of 7 NOAA charts
 - **Chart 18600**, Trinidad Head to Cape Blanco (January 2002)
 - **Chart 18620**, Point Arena to Trinidad Head (June 2002)
 - **Chart 18640**, San Francisco to Point Arena (August 2005)

Three Mile Determination (cont'd)

- **Chart 18680**, Point Sur to San Francisco (June 2005)
- **Chart 18700**, Point Conception to Point Sur (July 2003)
- **Chart 18720**, Point Dume to Purisima Point (January 2005)
- **Chart 18740**, San Diego to Santa Rosa Island (April 2005)
- ARB notification when charts get updated

Recordkeeping

- The following records are required when traveling in Regulated California Waters:
 - Date and time of start and stop of incineration
 - Position of ship in latitude and longitude
 - Estimated amount incinerated in cubic meters
 - Name or signature of officer in charge of the operation
 - When operation is required under the United States Coast Guard (USCG), the name, unit, and phone number of USCG personnel
 - Records kept onboard for two years
 - Available upon request for inspection or upon request by Executive Officer

Recordkeeping (cont'd)

- Optional protocol for military vessels
 - Allows military to enter into a protocol which provides an equivalent level of verification of compliance
 - Necessary to preserve national security



Enforcement of ATCM

- ARB enforcement
- Onboard inspections
- Review of garbage record logs
- Optional Protocol for Military Vessels
 - Allows military to enter into a protocol which provides an equivalent level of verification of compliance
 - Necessary to preserve national security

Schedule and Contact

- Workgroup meetings will continue
- Proposed Amended ATCM and Staff Report
 - September 29, 2006
- Board Hearing
 - November 17, 2006

Further information

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